

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

OneBeacon America Insurance Company, a Massachusetts Corporation, as subrogee of Gwinnett Clean & Beautiful, a Georgia Corporation,)	
)	Civil Action No. 1:12-CV-03536-SCJ
Plaintiff,)	
)	
vs.)	JURY TRIAL DEMANDED
)	
D&C Fire Protection, Inc. a Georgia Corporation,)	
)	
Defendant.)	

AFFIDAVIT OF DANIEL L. ARNOLD, P.E., FSFPE

I, Daniel L. Arnold, P.E., FSFPE, provide the following testimony upon personal knowledge and under oath for use in this case:

1. I am over the age of eighteen (18) and am not suffering from any disability that would render me incompetent to testify.

2. I am a registered professional engineer practicing in the field of fire protection engineering. I was retained by Plaintiff OneBeacon America Insurance Company to investigate the circumstances of the fire at issue in this case.

3. Attached to this affidavit as Exhibit A is an extract from National Fire Protection Association Standard 13, 2002 Edition, "Standard for the Installation of

Sprinkler Systems.” I regularly use and refer to NFPA 13, including the 2002 Edition in my professional work and attest that the extract attached hereto is a true and authentic copy of a portion of NFPA 13, 2002 Edition.

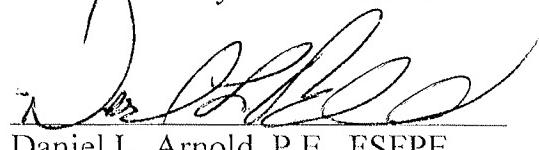
4. NFPA 13, 2002 Edition, has been adopted as a mandatory minimum state wide fire safety standard with non-relevant amendments by the Georgia Safety Fire Commissioner in Chapter 120-3-3 of the Rules and Regulations of the Safety Fire Commissioner, “Rules and Regulations for the State Minimum Fire Safety Standards.”

5. As adopted, NFPA 13, 2002 Edition is the minimum state-side standard for the installation of sprinkler systems in Georgia both currently and at the time that D&C Fire Protection performed the work that is at issue in this case.

6. I confirmed that NFPA 13, 2002 Edition with non-relevant amendments was adopted as a minimum state-wide fire safety standard under Chapter 120-3-3 by referring to the website of the Safety Fire Commissioner. This website makes available the full text of the current rules and regulations of the Safety Fire Commissioner, as well as historical records of some previous rules and regulations. I and other professional engineers practicing in the field of fire protection engineering regularly use and refer to the Safety Fire Commissioner’s website to confirm the currently enforced rules and regulations as well as historical

rules and regulations. This information can be accurately and readily determined from the website and the website's accuracy cannot reasonably be questioned.

7. I have reviewed the Power Point presentation dated October 19, 2010, by Dwayne Garriss, attached as Exhibit 1 to Michael McGreal's affidavit. Although I know and trust Dwayne Garriss, it is unreasonable for a professional fire protection engineer to rely solely upon such a Power Point presentation for resolving code compliance issues, including determining applicable regulations and codes and when they came into effect. The proper method for making such a determination is by referring to the Georgia Safety Fire Commissioner website which lists currently enforced rules and regulations and some historical rules and regulations. If a needed historical rule and regulation is not available on the website, it should be obtained directly from the Safety Fire Commissioner's office.



Daniel L. Arnold, P.E., FSFPE

Sworn to and subscribed before
me this 7th day of November,
2013.



Notary Public

My Commission Expires: 8-14-16

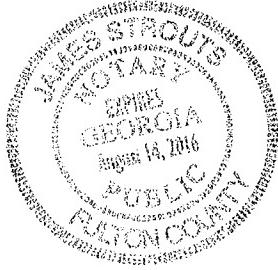


EXHIBIT A

8.5.5.2* Obstructions to Sprinkler Discharge Pattern Development.

8.5.5.2.1 Continuous or noncontinuous obstructions less than or equal to 18 in. (457 mm) below the sprinkler deflector that prevent the pattern from fully developing shall comply with 8.5.5.2.

8.5.5.2.2 Sprinklers shall be positioned in accordance with the minimum distances and special requirements of Sections 8.6 through 8.12 so that they are located sufficiently away from obstructions such as truss webs and chords, pipes, columns, and fixtures.

8.5.5.3* Obstructions that Prevent Sprinkler Discharge from Reaching the Hazard. Continuous or noncontinuous obstructions that interrupt the water discharge in a horizontal plane more than 18 in. (457 mm) below the sprinkler deflector in a manner to limit the distribution from reaching the protected hazard shall comply with 8.5.5.3.

8.5.5.3.1 Sprinklers shall be installed under fixed obstructions over 4 ft (1.2 m) wide such as docks, decks, open grate flooring, cutting tables, and overhead doors.

8.5.5.3.2 Sprinklers shall not be required under obstructions that are not fixed in place such as conference tables.

8.5.5.3.3 Sprinklers installed under open gratings shall be of the intermediate level/rack storage type or otherwise shielded from the discharge of overhead sprinklers.

8.5.6* Clearance to Storage.

8.5.6.1 Unless the requirements of 8.5.6.2, 8.5.6.3, 8.5.6.4, or 8.5.6.5 are met, the clearance between the deflector and the top of storage shall be 18 in. (457 mm) or greater.

8.5.6.2 Where other standards specify greater clearance to storage minimums, they shall be followed.

8.5.6.3 A minimum clearance to storage of 36 in. (0.91 m) shall be permitted for special sprinklers.

8.5.6.4 A minimum clearance to storage of less than 18 in. (457 mm) between the top of storage and ceiling sprinkler deflectors shall be permitted where proven by successful large-scale fire tests for the particular hazard.

8.5.6.5 The clearance from the top of storage to sprinkler deflectors shall be not less than 3 ft (0.9 m) where rubber tires are stored.

8.5.7 Skylights. Sprinklers shall be permitted to be omitted from skylights and similar ceiling pockets not exceeding 32 ft² (3 m²) in area, regardless of hazard classification, that are separated by at least 10 ft (3 m) horizontally from any other skylight or unprotected ceiling pocket.

8.6 Standard Pendant and Upright Spray Sprinklers.

8.6.1 General. All requirements of Section 8.5 shall apply to standard pendant and upright spray sprinklers except as modified in Section 8.6.

8.6.2 Protection Areas per Sprinkler (Standard Pendant and Upright Spray Sprinklers).

8.6.2.1 Determination of the Protection Area of Coverage.

8.6.2.1.1 Except as permitted by 8.6.2.1.2, the protection area of coverage per sprinkler (A_s) shall be determined in accordance with 8.6.2.1.

8.6.2.1.2 The requirements of 8.6.2.1.1 shall not apply in a small room as defined in 3.3.20; the protection area of coverage for each sprinkler in the small room shall be the area of the room divided by the number of sprinklers in the room.

8.6.2.2 Maximum Protection Area of Coverage.

8.6.2.2.1* The maximum allowable protection area of coverage for a sprinkler (A_s) shall be in accordance with the value indicated in Table 8.6.2.2.1(a) through Table 8.6.2.2.1(d).

8.6.2.2.2 In any case, the maximum area of coverage of a sprinkler shall not exceed 225 ft² (21 m²).

8.6.3 Sprinkler Spacing (Standard Pendant and Upright Spray Sprinklers).

8.6.3.1 Maximum Distance Between Sprinklers. The maximum distance permitted between sprinklers shall comply with Table 8.6.2.2.1(a) through Table 8.6.2.2.1(d).

8.6.3.2 Maximum Distance from Walls.

8.6.3.2.1 The distance from sprinklers to walls shall not exceed one-half of the allowable distance between sprinklers as indicated in Table 8.6.2.2.1(a) through Table 8.6.2.2.1(d).

8.6.3.2.2 The distance from the wall to the sprinkler shall be measured perpendicular to the wall.

8.6.3.2.3* The requirements of 8.6.3.2.1 shall not apply where walls are angled or irregular, and the maximum horizontal distance between a sprinkler and any point of floor area protected by that sprinkler shall not exceed 0.75 times the allowable distance permitted between sprinklers, provided the maximum perpendicular distance is not exceeded.

8.6.3.2.4* The requirements of 8.6.3.2.1 shall not apply within small rooms as defined in 3.3.20, sprinklers shall be permitted to be located not more than 9 ft (2.7 m) from any single wall, and sprinkler spacing limitations of 8.6.3 and area limitations of Table 8.6.2.2.1(a) shall not be exceeded.

8.6.3.2.5 Under curved surfaces, the horizontal distance shall be measured at the floor level from the wall, or the intersection of the curved surface and the floor to the nearest sprinkler shall not be greater than one-half the allowable distance between sprinklers.

8.6.3.3 Minimum Distances from Walls. Sprinklers shall be located a minimum of 4 in. (102 mm) from a wall.

8.6.3.4 Minimum Distances Between Sprinklers.

8.6.3.4.1 Unless the requirements of 8.6.3.4.2, 8.6.3.4.3, or 8.6.3.4.4 are met, sprinklers shall be spaced not less than 6 ft (1.8 m) on center.

8.6.3.4.2 Sprinklers shall be permitted to be placed less than 6 ft (1.8 m) on center where the following conditions are satisfied:

- (1) Baffles shall be installed and located midway between sprinklers and arranged to protect the actuating elements.
- (2) Baffles shall be of noncombustible or limited-combustible material that will stay in place before and during sprinkler operation.
- (3) Baffles shall be not less than 8 in. (203 mm) wide and 6 in. (152 mm) high.
- (4) The tops of baffles shall extend between 2 in. and 3 in. (51 mm and 76 mm) above the deflectors of upright sprinklers.
- (5) The bottoms of baffles shall extend downward to a level at least even with the deflectors of pendant sprinklers.